

REMARKS

In the Office Action, the Examiner had rejected claims 10-13 under 35 U.S.C § 102(b) as being anticipated by Kierbow, et al., (U.S. Patent 4,265,266). In particular, the Examiner indicates that Figure 26, element 448 of Kierbow's '266 reference shows setting a feed rate for a rotary vane feeder and that adjusting a discharge rate of a metering device to a value that is lower than the feeder of the preceding rotary vane feeder is shown in Figure 22 elements 396, 402, and 404 also of the Keirbow's '266 reference. Following a careful review of the Keirbow's '266 reference, the applicant notes that the Keirbow reference teaches a plurality of storage tanks/bins some being of smaller and some of larger capacity and providing lower or greater feed rates in particular "the range of flow rates which may be provided by the liquid metering system 44 and 46 for the larger storage tanks 1 and 2, overlaps with the somewhat lower range of flow rate which may be provided by the metering system 48-56 of smaller liquid storage tanks 3-7." (See column 6, lines 63-69). In particular, the plurality of storage tanks/bins are arranged to feed in parallel and into a common blender tub 86 (see figure 4). Keirbow clearly does not teach "adjusting a discharge rate of the metering device to a value that is lower than the feed rate of the preceding rotary-vane feeder so that return feed from the rotary vane feeder to the source container takes place" (Claim 10 as amended). Thus, the Applicant believes that Kierbow clearly does not anticipate the Applicant's invention as claimed.

The Examiner also rejects Claims 11, 12 and 13 under 35 U.S.C § 102(b) as also being anticipated by the Kierbow's '266 reference. The Applicant notes that Kierbow discusses monitoring and controlling metering and/or feed rate of materials from the storage bins/tanks but clearly lacks any provision for the return feed of the Applicant's invention and thus could not anticipate the further limitations of the dependant claims 11, 12 and 13.

The Examiner also rejected Claims 10-13 under 35 U.S.C. § 102(b) as being anticipated by the Iwamura, et al., (JP 62215424 A) reference. Following a review of the Iwamura reference, the Applicant notes that Iwamura appears to be directed to an arrangement of regulating the velocity of particles thereby regulating a flow rate of the same by controlling the volume of the carrier gas in a conveyor pipeline. However, the Applicant notes that Iwamura also appears to fail to disclose adjusting a discharge rate of the metering device ... so that return

feed from the rotary vane feeder to the source container takes place” (Claim 10 as amended). The Applicant also notes that the tank 10 in the Iwamura reference could be considered to correspond to the container 2 of the Applicant’s invention, however, Iwamura clearly appears to lack an intermediate container and thus could not anticipate the Applicant’s invention as claimed in dependant claim 11. As Iwamura clearly appears to fail to include limitations of the Applicant’s device as claimed in independent claim 10, the Applicant believes that Iwamura could not then anticipate the further limitations as further identified in dependant claims 12 and 13.

The Examiner also rejected claims 10-13 under the judicially created doctrine of nonstatutory double patenting over U.S. Patent 6,041,664, U.S. Patent 5,399,500 in view of Kierbow, et al, U.S. 5,184,892 in view of Kierbow, et al., U.S. Patent 5,255,830 in view of Kierbow, et al., and U.S. 5,301,555 in view of Kierbow, et al.

The Examiner rejected Claims 10-13 under the judicially created doctrine obviousness type double patenting as being unpatentable over claims 1-15 of U.S. Patent 6,041,664. The Examiner feels that the claims of the ‘664 are not patentably distinct from the pending claims of the subject application as they describe a method of determining instantaneous mass flow and obtaining an output of metering device downstream of said flow meter. The Applicant notes that claim 1 of the ‘664 reference claims “a method of continuous, gravimetric metering and mass flow determination of flowable materials comprising; determining instantaneous mass flow using a flow meter; and obtaining an output of a metering device downstream of the flow meter, wherein the output of the metering device is regulated to match a set-point flow rate with a time off set greater than zero that is dependant on the instantaneous mass flow determined by the flow meter”. Thus, claim 1 of the ‘664 reference clearly fails to claim “a method of continuous metering of both from a source container with a **rotary vane** feeder and a metering device following the rotary vane feeder comprising setting a feed rate for the rotary vane and adjusting a discharge rate of the metering device to a value that is lower than the feed rate of the preceding rotary vane feeder so that **return feed from the rotary vane feeder to the source container takes place.**” (Claim 10 as amended). In particular, the ‘664 reference clearly fails to disclose the “return feed” of the subject application and fails to include this limitation in claim 1 or any comparable or equivalent limitation. Claim 15 of the ‘664 reference claims “a method of

continuous gravimetric metering and mass flow determination of flowable materials comprising the following step: determining a instantaneous mass flow of the flowable materials using a flow meter; moving the flowable material [sic] to a metering device located a distance downstream of a flow meter and controlling the metering device to obtain a controlled output of the flowable materials from the metering device by regulating the output of the metering device of the metering device based on the instantaneous mass flow determined by the flow meter and a time for the flowable material to travel to the flow meter to the metering device". Thus, claim 15 of the '644 reference also fails to include the limitation of a "return feed" of the subject invention or any equivalent thereto.

Following a careful review of the Häfner'900 reference the Applicant notes that the Häfner'900 reference is directed to an apparatus for measuring mass throughput of a pourable material according to the Coriolis principle. In particular, in the Häfner'900 reference a flow of conveyed pourable material is incident along a generally axial charging direction and directed in a spin-off movement around the periphery of a measuring wheel along with a torque measuring means determining changes of a driving torque caused by a driving motor driving the measuring wheel such that a mass flow rate of the pourable material can be determined according to the Coriolis principle. However, the Applicant notes that the Häfner '900 reference fails to teach the return feed of the present application and it is unclear to the Applicant how the device of the Häfner'900 reference could even be adapted to perform this function. Thus, as the Applicant believes that neither the Häfner'900 reference of the Kierbow, et al reference teaches this aspect of the Applicant's invention as claimed, a double patenting rejection is not indicated.

The Examiner also rejected Claims 10-13 under the judicially created doctrine of obviousness type double patenting as being unpatentable over Claims 1-25 of U.S. Patent 5,184,892 in view of Kierbow et al. After a careful review of the '892 the Applicant notes that it appears that only claims 1-19 were issued in the '892 reference and that the feedback duct 56 of the '892 reference conveys an airstream and that the cited reference discloses "since some air is inherently lost in metering apparatus 10, a suction valve 96 is arranged in the neighborhood of blower 50 adding so much air that the amount of air in the system is maintained at a constant". (c.f. column 3 lines 6-12). Thus, the Applicant notes that the Häfner'892 reference fails to disclose a "return feed from the rotary vane feeder to the source container" (Claim 10 as

amended) and fails to provide any suggestion or motivation for the same. Thus, the Applicant believes that a double patenting rejection of the subject application over the '892 reference in view of Kierbow is also not indicated.

The Examiner also rejected claim 10-13 under the judicially created doctrine of obviousness double patenting as being unpatentable over claims 1-25 of U.S. Patent 5,255,830 in view of Kierbow, et al. Following a careful review of the Häfner '830 reference the Applicant notes that the '830 reference teaches a pressurized air space 56 arranged below rotor 44 at least below its pockets 55 which pressurized air space 56 is separated from rotor 44 by a porous wall typically in a form of a metal web. Pressurized space 56 is permanently supplied with pressurized air (or other gas) such that air is blown, finely distributed through web 48 and pockets 55 causing a fluidation of the pourable material in these pockets. This results in a considerable improvement of the flowability of the pourable material and considerably reduces the tendency of caking together of material particles." (c.f. column 3, lines 48-59). The Applicant can find no teaching or suggestion of the return feed of the subject application in the '830 reference and thus believes that a double patenting rejection over the '830 reference in view of Kierbow is also not indicated.

The Examiner also rejected Claims 10-13 of the subject application under the judicially created doctrine of obviousness type of double patenting as being unpatentable over claims 1-25 of U.S. Patent 5,301,555 in view of Kierbow et al. Following a review of the '555 reference the Applicant notes that it appears that only Claims 1-22 were issued in the '555 reference and that this reference also fails to teach, suggest, or claim the "return feed" aspect of the subject application. Thus the Applicant believes that an obviousness type double patenting rejection of the subject application over '555 reference in view of Kierbow et al., is also not indicated.

The Examiner also provisionally rejected claims 10-13 of the subject application under the judicially created doctrine of obviousness double patenting in view of the U.S. Application number 09/508235 in further view of Kierbow et al. The Applicant notes that the '235 application has since issued effective August 20, 2002 as U.S. Patent 6,435,039. However, following careful review of the '039 reference the Applicant notes that the '039 reference is directed to an apparatus for continuous gravimetric metering and mass flow determination of floatable materials, the discharge of flowable materials being controllable by altering a speed of

rotation of the metering device and discharge at the delivery point is regulated dependant on mass flow deviation as indicated at an anticipatory control point. Thus, the '039 reference is directed to maintaining a substantially uniform output flow under conditions of variation in source supply mass or density however, the '039 also clearly fails to claim, teach, or suggest the return feed of the subject application. Thus, the Applicant also believes that an obviousness double patenting rejection of the subject application as claimed in claims 10-13 as amended in view of '039 and the Kierbow references is not indicated.

The Examiner also provisionally rejected claims 10-13 of the subject application under the judicially created doctrine obviousness double patenting as being unpatentable under the claims of co-pending application number 09/720831 in view of Kierbow et al. Following a review of the 09/720831 application and the currently pending claims, the Applicant notes that the '831 application is directed to a chain conveyor for gravametric measuring/metering of both materials which is substantially different apparatus than the apparatus of the subject application and further notes that the claims of the subject application are directed of "**a method of** continuous metering of bulk material from a container with a **rotary vane feeder** and a metering device following a rotary vane feeder as the claims of the '831 application are directed to "chain conveyor for gravametric measuring/metering rather than any method of measuring or metering. Thus, the Applicant notes that the 09/720831 application clearly fails to claim, teach, or suggest the invention of the subject application as claimed in claim 10-13 as amended and that the '831 application has claims of an entirely different scope than the subject application.

The Applicant notes the particular advantage of the present invention that does not appear to be disclosed or suggested in any of the references of record that the feed provided by the rotary feeder is in excess of that metered through the metering device. This aspect of the invention provides a particular advantage of readily accommodating fluctuations or variations in the feed from the container that may periodically arise due to uneven compaction, voids, or other inconsistencies in the density in the material being feed through the device. The variable balance between the return feed provided to the container and the forward feed provided by the rotary vane feeder provides a net feed as metered through to the metering device that is relatively constant so as to accommodate these fluctuations in the density of the material being feed that may periodically arise with minimal change in the output. It does not appear that any of the

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references of record taken individually or in combination teach or suggest this aspect of the invention.

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SUMMARY

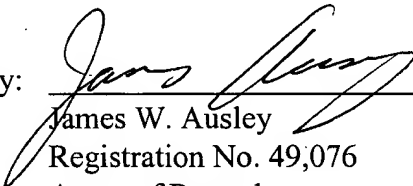
From the foregoing, the Applicant believes that the subject application is now in a condition ready for allowance and respectfully requests the prompt allowance of the same. However, should there remain any impediment to the allowance of this application that may be resolved by a telephone conference, the Examiner is respectfully requested to contact the undersigned at the indicated telephone number.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

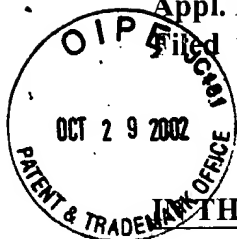
Respectfully submitted,

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Appl. No. : 09/04288
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend the Claims as follows:

10. (Amended) A method of continuous metering of bulk material from a source container with a rotary-vane feeder and a metering device [following] fed by the rotary-vane feeder, comprising:

setting a feed rate for the rotary-vane feeder; and

adjusting a discharge rate of the metering device to a value that is lower than the feed rate of the preceding rotary-vane feeder, so that return feed from the rotary-vane feeder to the source container takes place.

13. (Amended) The method of Claim 10, further comprising using [is] a pneumatic feed, and altering at least one of an air amount and an air speed to regulate discharge of the metering device.

Please add the following new Claims:

19. (New) A method of continuous metering of bulk material from a source container with a rotary-vane feeder and a metering device fed by the rotary-vane feeder, comprising:

setting a feed rate for the rotary-vane feeder; and

adjusting a discharge rate of the metering device to a value that is lower than the feed rate of the preceding rotary-vane feeder in accordance with a filling state of an intermediate container arranged between the rotary-vane feeder and the metering device, so that return feed from the rotary-vane feeder to the source container takes place.

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